

Installation of Ultrasonic Flow Sensor on Narkomed 2B

INSTALLATION PROCEDURE

The following procedure is divided into four parts: Replacing the volume sensor interface panel to accommodate the new ultrasonic flow sensor connector, installing new firmware and power cable, selecting the ultrasonic flow sensor function, and installing the new flow sensor on the absorber assembly.

Installing the new sensor interface panel:

1. Turn the System Power switch to STANDBY and remove AC power from the machine.
2. Disable the battery circuit breaker by pulling out its button with a knife or sharp object.
3. Disconnect the Spiromed sensor cord from its interface panel on the machine.
4. Loosen the screws securing the top cover of the machine. Raise the cover, disconnect the ground wire and set the cover aside.
5. Remove the cover plate from the processor assembly.
6. Disconnect the Spiromed sensor interface cable from J9 on the processor PCB assembly. See Figure 1.
7. At the back of the machine, remove the cover from the wiring channel and interface housing. See Figure 2.
8. Disconnect the ground wire and remove the existing volume sensor interface panel assembly (including the cable) from the interface housing and wiring channel.
9. Take the new volume sensor interface panel assembly and feed the connector end of the cable up through the back of the interface housing and wiring channel up into the monitor box. See Figure 3.
Continue feeding in the cable until the new volume sensor interface panel can be positioned in the interface housing opening.
10. Install the new interface panel in the housing with the hardware that previously retained the original sensor interface panel.
11. Install the ground wire from the new interface panel in the same manner as the original (see Figure 3) and tighten the ground lug retaining nut.
12. Reinstall the wiring channel cover.
13. Join the connector end of the new interface cable to J9 on the processor assembly (ref. Figure 1).

NOTE: The flying lead attached to this connector will be joined to a new power supply cable in a following step.

INSTALLATION PROCEDURE (continued)

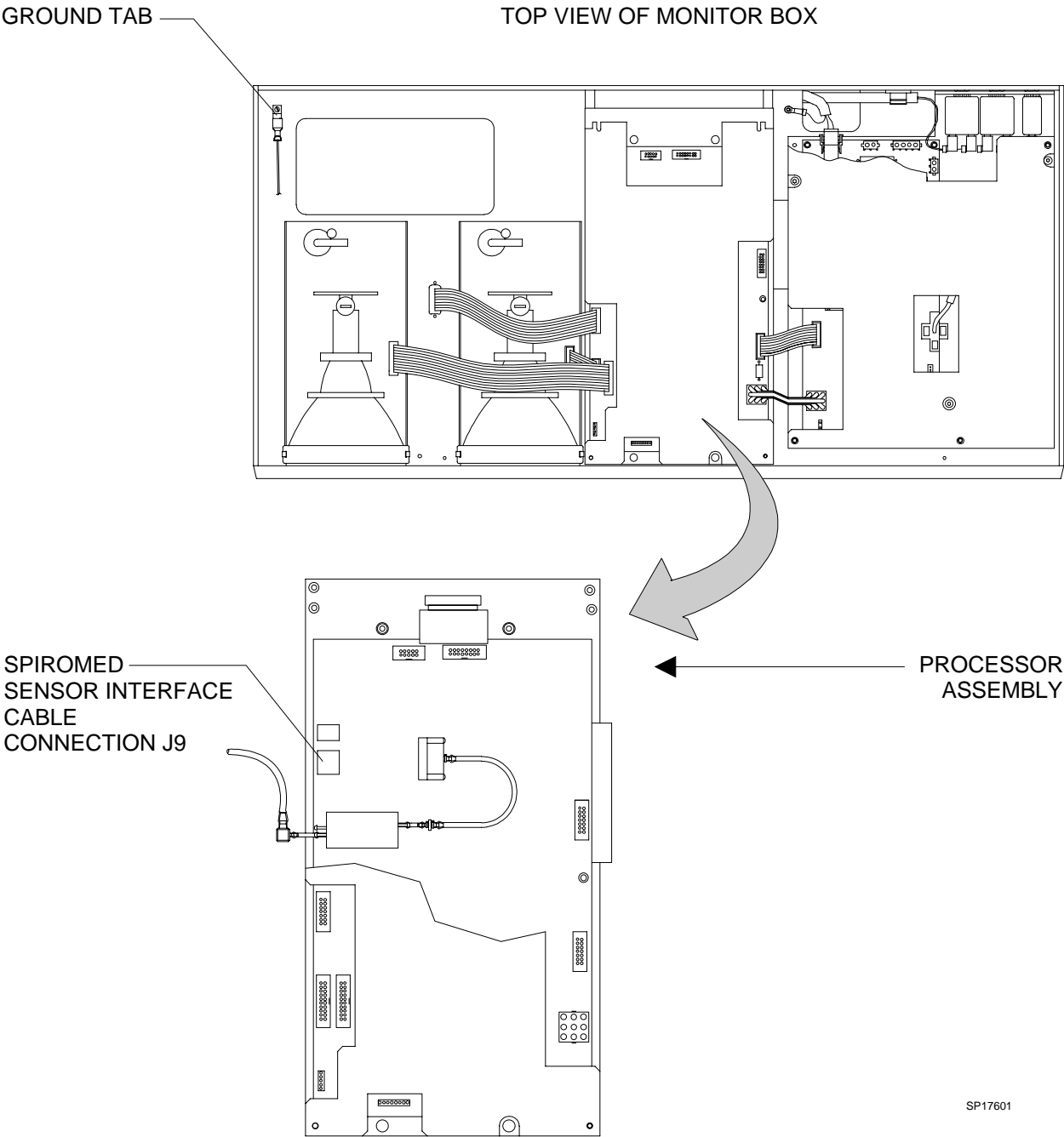


Figure 1. Spiromed Sensor Interface Cable Connection

INSTALLATION PROCEDURE (continued)

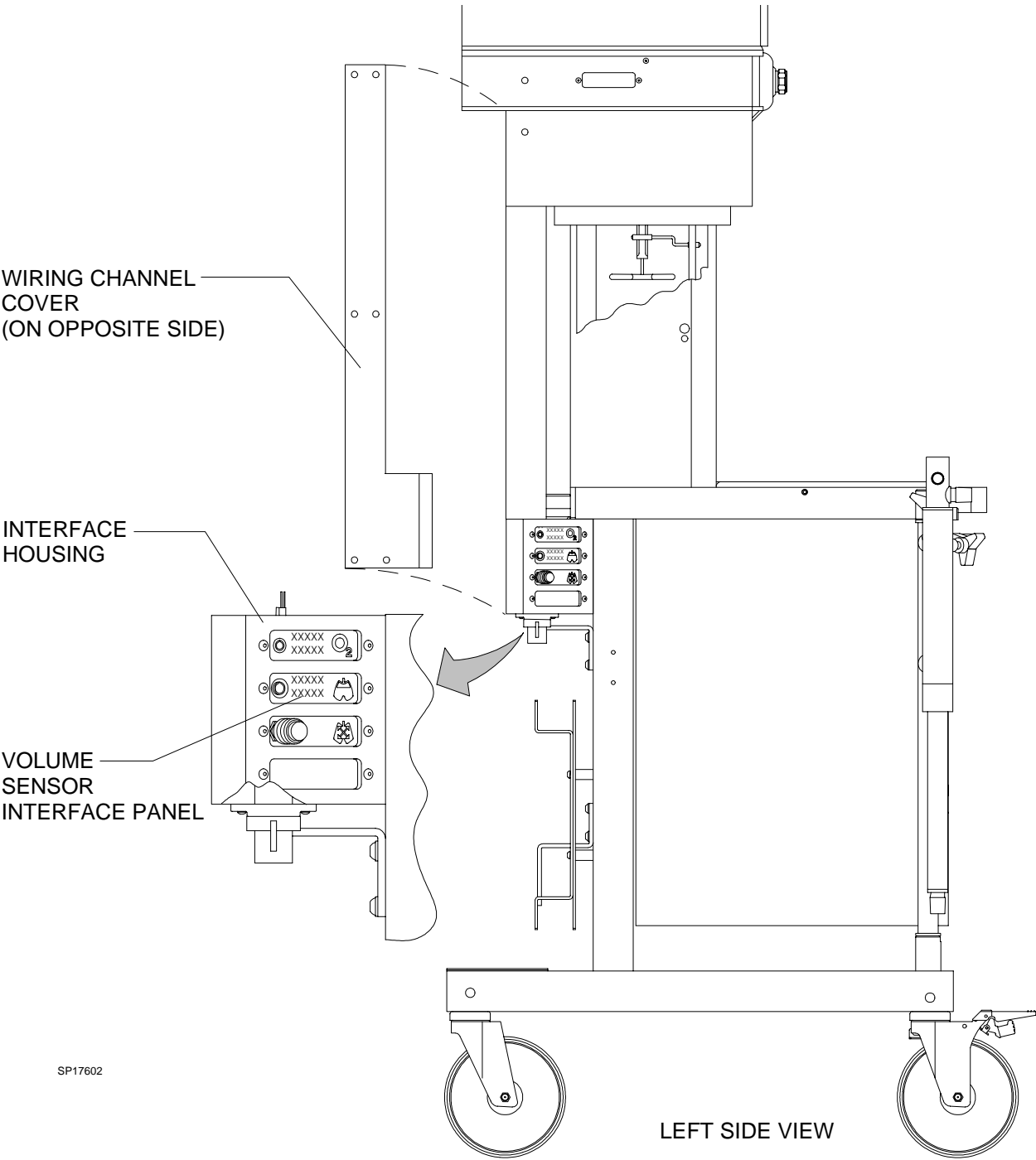
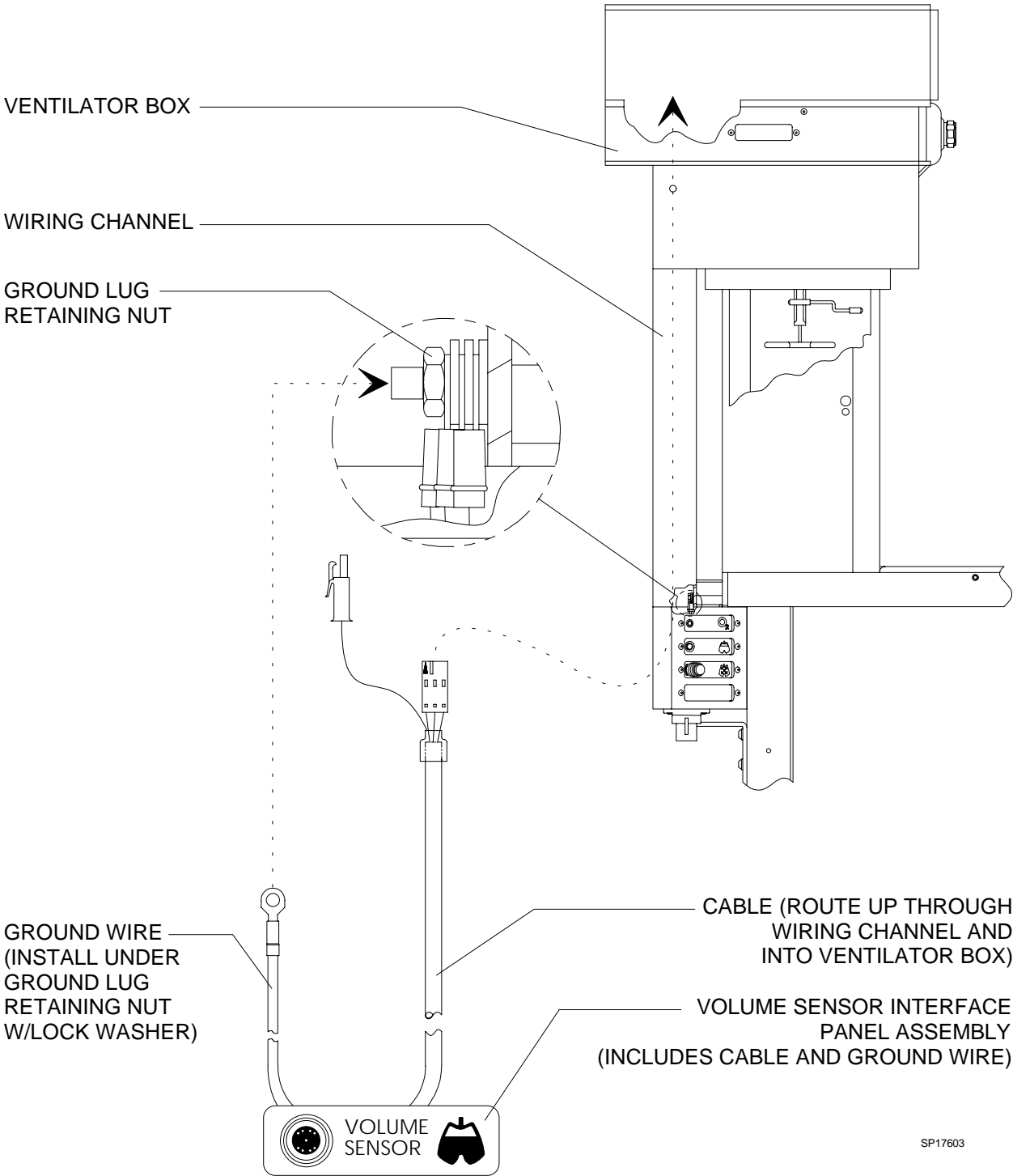


Figure 2. Interface Housing and Wiring Channel Arrangement

INSTALLATION PROCEDURE (continued)



SP17603

Figure 3. Volume Sensor Interface Cable Installation

INSTALLATION PROCEDURE (continued)

Software and power cable installation:

Software needed for the ultrasonic flow sensor is supplied for the Narkomed 2B as firmware in the form of a replaceable EPROM.

CAUTION: The processor board contains static sensitive devices. Use ESD protection when handling the processor assembly.


1. Verify that AC power is removed from the machine and the battery circuit breaker is disabled.
2. Carefully remove the firmware chip, U33, from the processor board. See Figure 4.
3. Insert the new firmware chip (P/N 4114756) into the socket. Be sure that the index on the chip is facing as shown in the illustration.
4. Replace the existing wire harness assembly connecting J10 on the power supply to J5 on the processor board with the new cable assembly (P/N 4114400). See Figure 5.

Connect the end with the flying lead to J10 on the power supply; connect the other end to J5 on the processor board.
5. Reinstall the cover plate on the processor assembly.
6. Join the flying lead from the new power supply cable to the flying lead attached to the sensor interface connector at J9 on the processor board. See Figure 5.
7. Reconnect the top cover ground wire and reinstall the top cover on the machine.
8. Reconnect all interface cables except the Volume sensor cable.

9. Enable the battery circuit breaker and restore power to the machine.
10. Turn the System Power switch to ON, and observe the software version number that appears on the power-up diagnostics screen. Verify that it matches the label on the new firmware chip.

Ultrasonic Flow Sensor Selection:

The new software allows the machine to be used with either the Spiromed or the ultrasonic flow sensor.

1. Access the Service Menu screen by pressing and holding the CONFIG key, and simultaneously pressing the 21% and APNEA ALARM DISABLE keys.
2. Press the key next to CALIBRATION on the screen, then press the Oxygen Alarm  key to bring up the secondary service screen.
3. Press the TRACE key to toggle the screen selection to ULTRASONIC.
4. Press TREND key to exit the secondary service screen. Press the TREND key again to exit the Service Menu screen. (This will re-boot the machine.)

INSTALLATION PROCEDURE (continued)

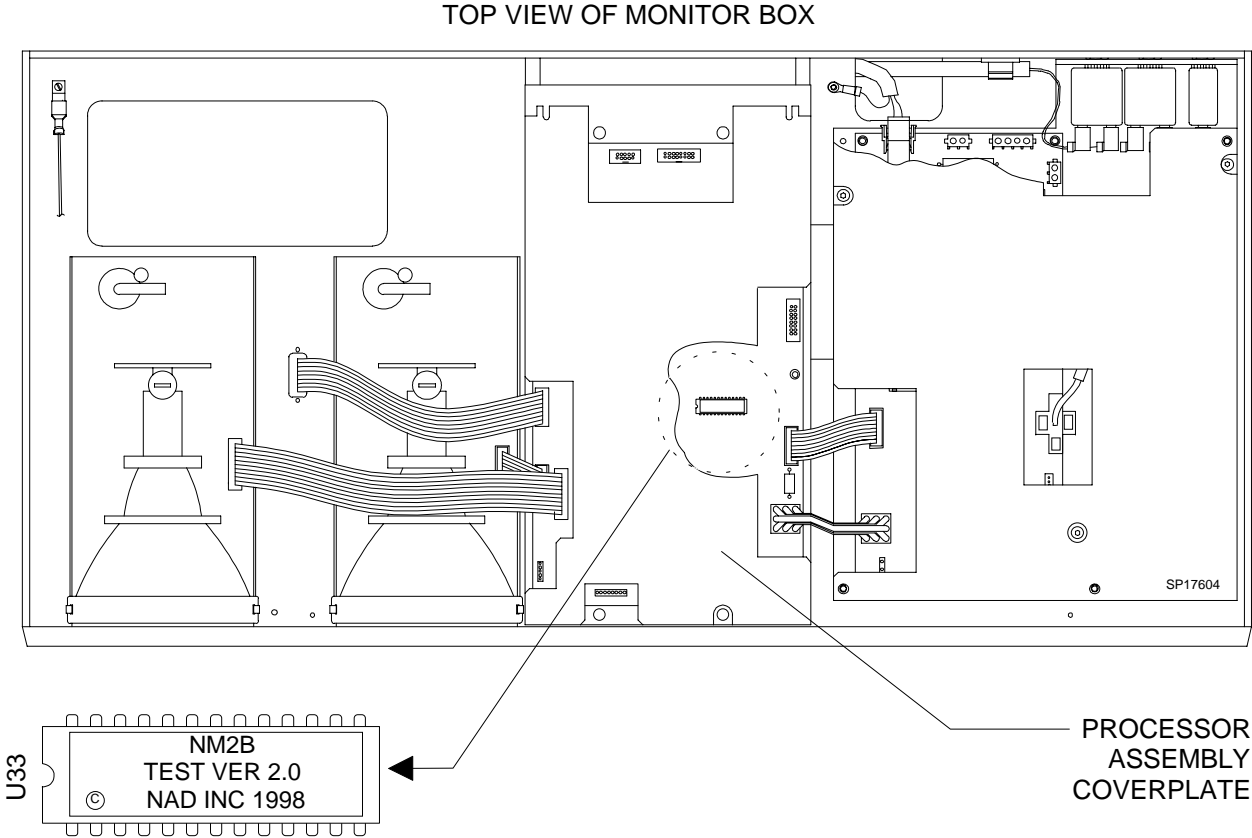


Figure 4. Firmware Chip Location

INSTALLATION PROCEDURE (continued)

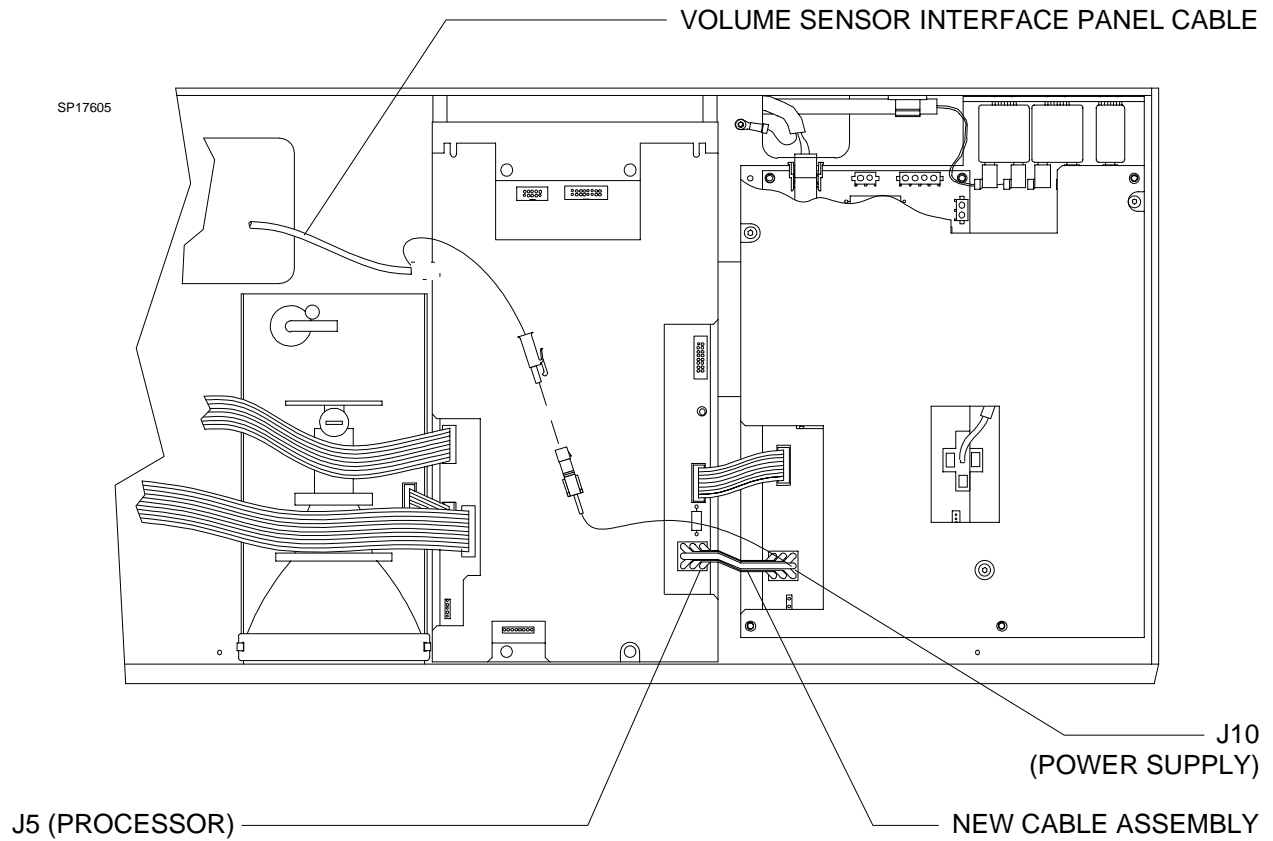


Figure 5. Power Cable and Flying Lead Connection

INSTALLATION PROCEDURE (continued)

Ultrasonic Flow Sensor Installation:

1. Remove the existing Spiromed sensor from the absorber assembly by unscrewing its retaining nut.

CAUTION: Do not twist the body of the sensor when loosening the retaining nut. Hold the sensor while loosening the retaining nut to prevent damage to the unit.

2. Install the new flow sensor bracket and clamp on the expiratory valve mount neck, below the threads as shown in Figures 6 and 7.

Caution: In order to avoid interference between the connector hose and the bellows assembly, the flow sensor bracket must be oriented as shown in Figure 6.

3. Reinstall the expiratory valve (be sure a gasket is in place), oriented as shown in the illustration.
4. Slide the ultrasonic flow sensor down onto the bracket.
5. Install the connector hose on the threaded port of the flow sensor, and join the other end of the hose to the expiratory valve.
6. Connect the sensor plug to the new volume sensor receptacle on the interface housing
7. Perform a PMS procedure on the system.

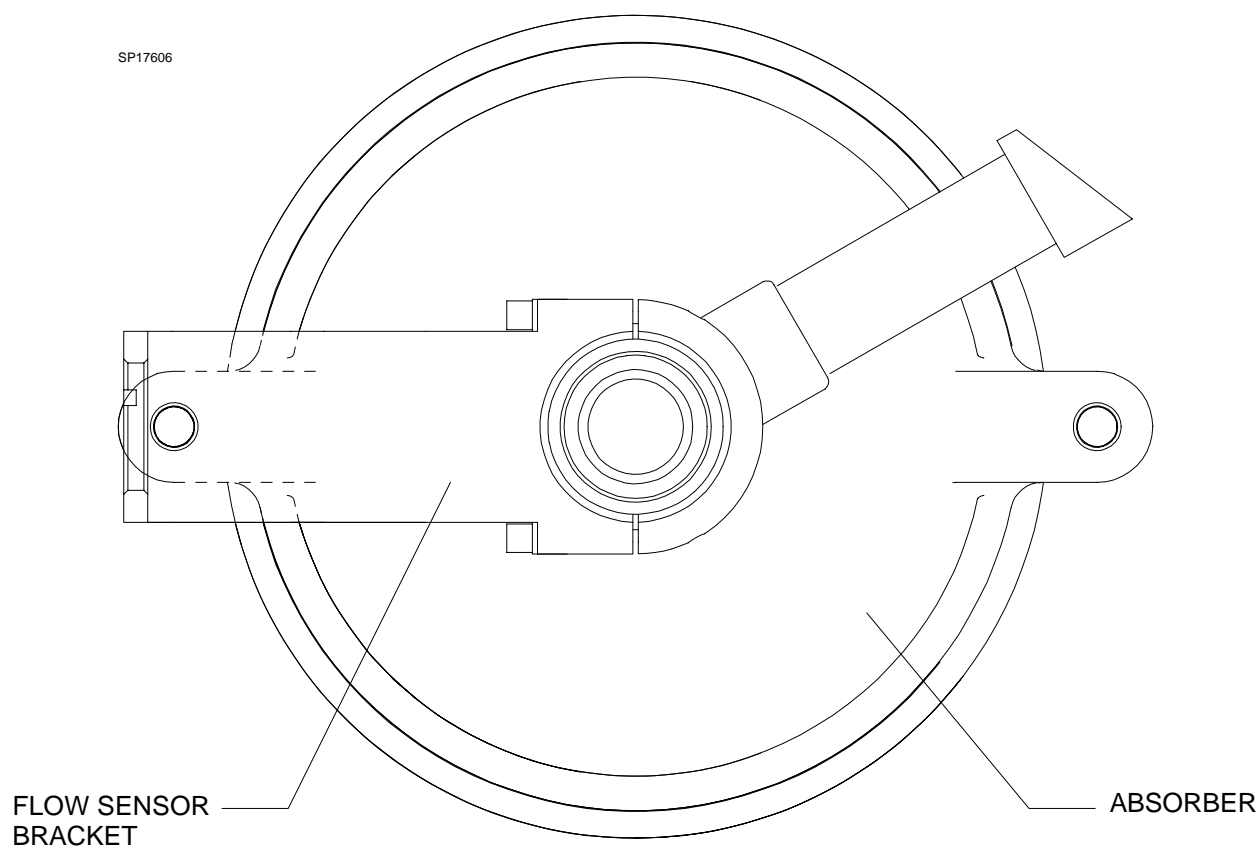
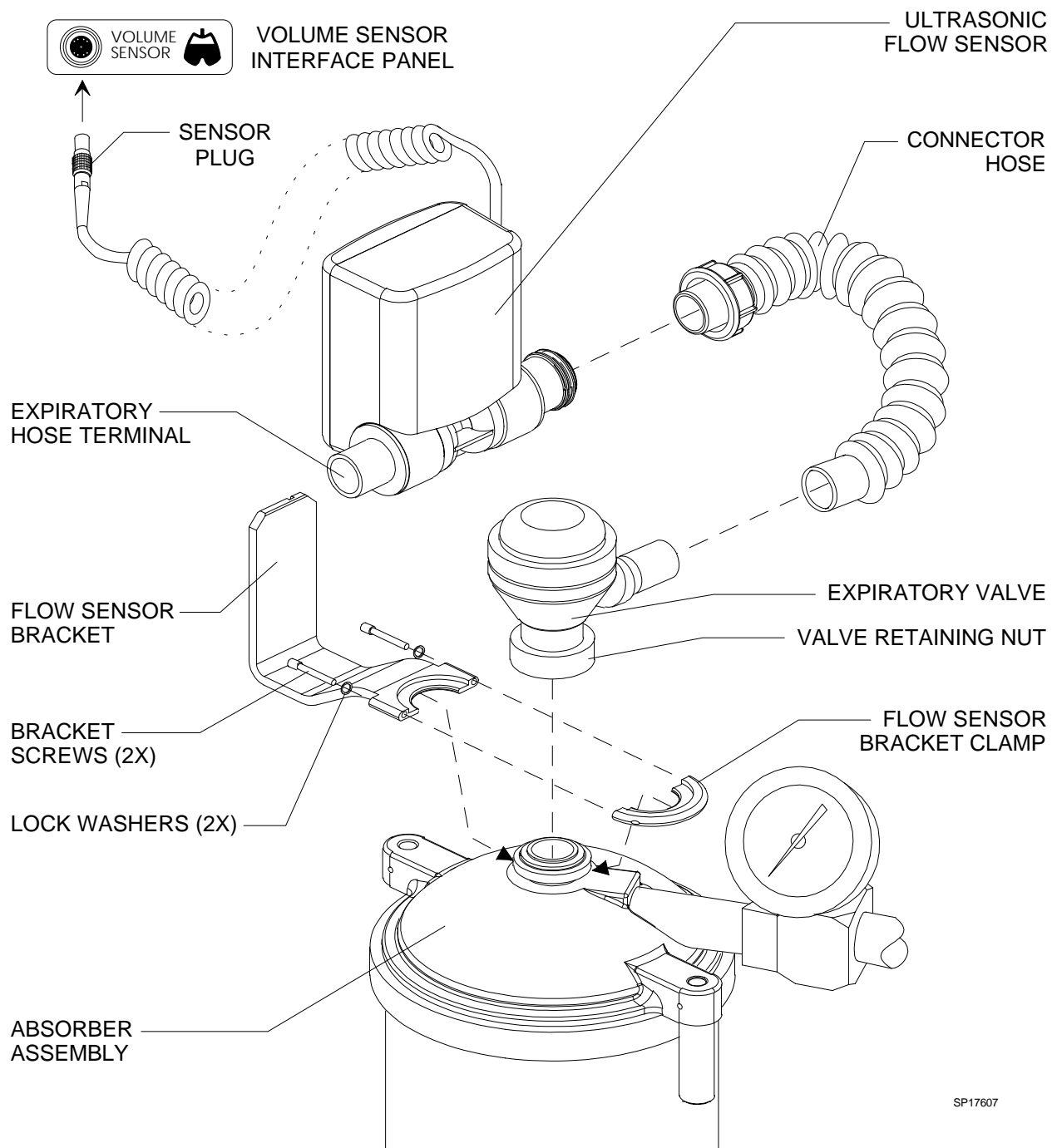


Figure 6. Flow Sensor Bracket Orientation: Top View

INSTALLATION PROCEDURE (continued)



SP17607

Figure 7. Ultrasonic Flow Sensor Installation

**North
American
Dräger**

Quality Service for Life®

DrägerServiceSM
3122 Commerce Drive
Telford, PA 18969
(215) 721-5402
(800) 543-5047
(215) 723-5935 Fax

Part Number: SP00176

Rev: -
Date: July 1, 1998
© 1998 N.A.D., Inc.